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# Ulaanbaatar's Ger District Issues: Changes and Attitudes

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# **Ulaanbaatar's *Ger* District Issues: Changes and Attitudes**

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## Abstract

Several of Ulaanbaatar's current issues are directly related to Ulaanbaatar's sprawling *Ger* District. The *Ger* District is home to approximately 736,000 residents, 61% of Ulaanbaatar's population (Galimbyek, 2015). The significant growth in Ulaanbaatar is shown by its 52.8% of residents who were born outside of the city, the majority of migrants moving into the *Ger* District due to a lack of housing. (Chilkhaasuren & Baasankhuu, 2012). The development of Ulaanbaatar has not kept up with the rapid growth leading to inadequate infrastructure in much of the *Ger* District. In turn, inadequate infrastructure has lead to high pollution levels, negatively affecting public health.

In this research, I (1) identify the *Ger* District's problems, (2) look at what change has been made and what change is planned to be made to reduce *Ger* District related problems, and (3) analyze the opinions of *Ger* District residents and urban area residents alike to find perceptions of the problems, and general attitude towards life in the *Ger* District. I did this by using literary sources, 11 interviews, 49 surveys and observations. The purpose of this research is to assess what change is happening to minimize *Ger* District related issues, especially pollution as it is linked to negative impacts on public health. Also, this research assesses the opinions of Ulaanbaatar residents regarding the *Ger* District to increase knowledge of what change is most accepted.

I found that a majority of Ulaanbaatar's population is aware that problems associated to the *Ger* District do exist. This is important, as to inspire change, people must be aware of present issues. I also found that against what I had predicted, a large number of Ulaanbaatar residents, both those living in urban and *ger* areas would either like to or do like living in *ger* areas. A number of people stated that they would like to live in the *Ger* District with improved infrastructure. It is my hope that my results will give insight as to how change should be made.

**Keywords:** Urban & Regional Planning, Individual and Family Studies, Public Health

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## Glossary

- **Ger-** round, portable housing structure composed of a wooden frame with a felt covering. Traditionally used by nomadic herders, but is now a common residence type in Ulaanbaatar.
- **Ger District-** also referred to as *ger* area, the large region on the outskirts of Ulaanbaatar where the majority of the city resides. The majority type of housing is the *ger*, second is the house.
- **Ulaanbaatar-** The capital city of Mongolia as well as the largest city in Mongolia.
- **Dzud-** a harsh Mongolian Winter in which a large number of herd animals die due to freezing weather and minimal food resources.
- **Aimag-** The name for province in Mongolia. Mongolia is composed of 21 Aimags.
- **Soum-** The next level down from Aimag. The equivalent to a county in the United States.
- **Khoroo-** the term for the sub districts within Ulaanbaatar.
- **Hashaa-** fenced in plot of land owned and lived on by *Ger* District residents.
- **Mongolian Tugrik (MNT)** – Mongolian currency. As of May 31, 2015, one US Dollar was equivalent to 1912.48 Mongolian *Tugrik*.
- **Water Kiosk-** station where *Ger* District residents buy water.

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## 1. Introduction

The population of Ulaanbaatar is ever increasing. Influx of migrants to Ulaanbaatar has been on the rise since 2000 (Neupert et. Al, 2012). Migration to Ulaanbaatar is the result of a number of causes. Primary reasons people are moving to the capital city are its superior services including better healthcare, education and jobs. In the rural areas of Mongolia, such services are more difficult to access and are of lesser quality. Migration to Ulaanbaatar is also a result of more natural disasters such as *dzud* (Chilkhaasuren & Baasankhuu, 2012). Despite the stability that living in the capital city provides to the once nomadic population, the rise in population of the *Ger* district poses a multitude of problems for the established city dwellers, and also leaves the *Ger* District dwellers without a lot of conveniences of modern living. The rapid growth of Ulaanbaatar poses problems to the city and the people that live within it.

One of the most significant issues with Ulaanbaatar's growing population is providing sufficient housing for its residents. This housing deficit is a result of inward migration (Adding Capacity, 2014). Due to the housing deficit, the majority of people that move to Ulaanbaatar become residents of what is known as the *Ger* District. The *Ger* District lies on the outskirts of Ulaanbaatar and is home to upwards of 60% of the capital city's population (Buyandalai et. Al, 2013). The *Ger* District is named for the most common housing type in all of Ulaanbaatar, as a total of 45% of the city's residents live in *gers* (Adding Capacity, 2014). A *ger* is a small, round, portable structure used by nomadic herders as it is sturdy and easy to take apart and set up as well as to transport. *Gers* are also used by many people residing within the *Ger* District of Ulaanbaatar.

For the most part, the *Ger* District isn't connected to the city's infrastructure meaning no running water, sewage, or heating. Due to the below freezing weather for a good portion of the year, people living in *gers* burn coal to stay warm. This is the main reason that Ulaanbaatar is one of the cities with the worst air quality in the world (Upton, 2013). Along with the high levels of air pollution there is also significant levels of soil and water pollution. Other than pollution, the *Ger* District has other issues including inadequate infrastructure, distance to water supply, health issues, and crime.



In this paper I will discuss the *Ger* District, assessing its problems and changes that are being made to combat these problems, namely through current and planned development. Beyond these assessments, my focus is the attitudes and opinions of people living within the *Ger* District. It is my belief that it is important to know what people want before change is made to the places people call home. So what do residents of the *Ger* District think about where they live? If any, what change do they think should be made? Although the *ger* is the preferred form of shelter in the countryside as it is more practical for a nomadic lifestyle, an apartment with the amenities that comes with it is more practical for an urban lifestyle. In my research I have also gained insight on what people living within urban areas think about the *Ger* District and its issues as the pollution it causes has been proven to affect public health (E. Dorjsuren, personal communication May 15, 2015).

### **1.1 The *Ger* District**

The *Ger* District lies on the outskirts of Ulaanbaatar, nearly entirely encompassing the city. It is likely that if it weren't for *Bogd Khan* National Park on the Southside of the city, the *Ger* District would surround the capital city in its entirety. As of 2014, approximately 736,000 people reside within *ger* areas (Galimbyek, 2015). This number is equivalent to 61% of Ulaanbaatar's entire population and almost 25% of the entire population of Mongolia. Being the most populated area in Mongolia, the *Ger* District is deserving of special focus.

In the *Ger* District, families live within a small fenced in area called a *hashaa*. The majority of *hashaas* are .07 hectare, which is the amount of land entitled to Ulaanbaatar residents by Mongolian Law (B. Gendenbazar, personal communication, May, 27 2015; Buxbaum & Deleg, 2010; Tumur-Ochir, 2002). If a family wishes to have more land it must purchase the land (Namsrai, personal communication, May 27 2015). When a family arrives in the *Ger* District from the countryside, they must register their plot with the *khoroos* administration for the average cost of 3,700 MNT. To obtain ownership the household must send in a land ownership application (Urban Poverty Profile, 2010).

In the *Ger* District there are two prominent dwelling types: *gers* and houses. Houses are generally constructed from wood or brick. From 2003 to 2004, ICT (India) and Khot Services (Mongolia) surveyed 1994 *Ger* District households. In their study they found that 19.9% of plots have houses, 47.1% have *gers*, and 33% of plots have houses and *gers* (Urban Poverty Profile, 2010). It is common for plots to host more than one household, which often leads to disputes when it comes to redevelopment from *ger* areas to apartment blocks (further discussed in section 3.1) (E. Enkhtaivan, personal communication, May 13, 2015).

## **1.2 Literature Review**

Since my study is focused on the opinions of residents of the *Ger* District, and whether individuals would prefer to live in *ger* areas or urban areas, I found it necessary to find out why individuals may prefer one to the other. I also think it is important to know why people consider certain styles of housing a home compared to others.

In “The House as Symbol of Self” written by Clare Cooper, research was conducted on what people see as a home. She wrote about a number of past studies and surveys in which people have described what they see as an ideal home. In studies conducted in Australia, England and the United States, the majority of individuals “of all incomes and backgrounds will tend to describe a free-standing, square, detached, single-family house and yard” as the perfect home. There is a sense of ownership when it comes to owning a house, and your own land. Cooper wrote, “An apartment is rarely seen as home, for a house can only be seen as a free-standing house-on-the-ground.” Unlike apartments, having a home and a yard gives one “territorial rights over a small portion of the earth.”

Besides the sense of ownership, people see having homes as having the opportunity individualize what is yours. Yet the way people see home is in cases, divided by class. While middle class households often see a house as a means for representation of self and family, lower income households see a house as a form of protection. Either way, ownership of a house and land allows individuals to design, construct and alter as they wish. (Cooper, 1974).

In a 2006 study conducted by Hirofumi Sugimoto, living conditions of *Ger* District households was compared to the living conditions of nomadic households. The results of those living in *ger* areas is valuable to my research. Much of the results tie in to difficulties of *Ger* District life. Some highlighted issues include that of infrastructure, trash collection, and toilet use. Although it seems that the research could have more depth, it is the research that I have found that is most similar to what I am researching. In general, it was found that *ger* district residents have less problems when it comes to access to electricity and better health care indicating living conditions in *ger* areas is better than the living conditions of nomads (Sugimoto et. Al, 2007).

In 2013, Jean Caldieron and Rick Miller conducted a study called “Residential Satisfaction in the Informal Neighborhoods of Ulaanbaatar, Mongolia”. This study stated that “there are no studies, until now, of residential satisfaction in *ger* districts in Ulaanbaatar.” There is support of my opinion that satisfaction of the home is important. In Caldieron and Miller’s study, 112 surveys were handed out to *Ger* District residents. 48% of survey participants were migrants from the countryside. 57% of participants have lived on the plot they live on now for less than five years.

For my study, the importance of this 2013 study is with the satisfaction of the household. The 2013 study found such results:

Table 1: “Residential satisfaction with dwelling” (Caldieron & Miller, 2013).

Are you satisfied with your dwelling?	Households (%)
Very satisfied	11
Satisfied	24
Average satisfaction	33
Unsatisfied	20
Very unsatisfied	9
No answer	3

The results show that only 29% of those surveyed are unsatisfied or very unsatisfied with their dwelling. This study also surveyed on whether people were fond of their neighborhoods:

Table 2: “Residential satisfaction with the neighborhood” (Caldieron & Miller, 2013).

Do you like this neighborhood?	Households (%)
Yes	69
No	23
No answer	9

As shown, the majority of those surveyed do like their neighborhood of residence. This study also asked one of the same questions I asked: Do *Ger* District residents want to move to an apartment? In Caldieron and Miller’s study they found that 61% of participants answered yes (Caldieron & Miller, 2013). As the first study of satisfaction of those living in Ulaanbaatar’s *Ger* District, this study is useful to my study.

### 1.3 Significance of Study

This study is significant for a number of reasons:

- (1) The *Ger* District is the primary cause for Ulaanbaatar’s high levels of pollution. Pollution has been linked to negative impacts on public health. Therefore, it is pertinent that steps are taken to reduce pollution levels.
- (2) It is important to look at changes that are being made to see how pressing issues are being handled. If change is ignored, it is difficult to assess what improvement has been made or what improvement is in the planning process.
- (3) Currently there is minimal research on the attitudes of people regarding the *Ger* District, both those whom live within and outside of it. The most important of information for my research is the attitude of the *Ger* District residents. It is critical to find out

what *Ger* District residents think about where they live and if any, what change they would like to see.

## 2. Issues

### 2.1 Housing Ulaanbaatar's Residents

Currently, there are issues with finding housing for all of Ulaanbaatar's residents. Approximately 52.8% of the capital's population was born outside of the city (Chilkhaasuren & Baasankhuu, 2012). People move to Ulaanbaatar for a host of reasons. Common reasons include better healthcare, increased quality of education and better job opportunities. In a survey conducted by the Asia Foundation in 2006, it was found that 28.8% of people moved to the *Ger* District of Ulaanbaatar for their children ("*Ger* Area Development", 2006). I interviewed a *Ger* District resident named Namsrai who moved to Ulaanbaatar for the benefit of his six children (Namsrai, personal communication, May 27, 2015). I can infer that better healthcare, education and job opportunities are the bettering reasons for why people move here for their children. Namsrai specifically mentioned he moved to Ulaanbaatar so his children could get better educations. While some people choose to move to Ulaanbaatar, some people are forced to due to loss of herd numbers, in some cases because of *dzud* (Chilkhaasuren & Baasankhuu, 2012). It is thought that 50 animals is the minimum for survival (Bruun and Odgaard, 2013). Without animals, a herding family doesn't have a source of income and is forced to find an alternate way of life.

From 2006 to 2011 Ulaanbaatar's population grew from 987,192 to 1,206,610 (Demographic Trends, 2013). To help aid the city's population growth, 53,000 apartment units were constructed and made available for residency from 2000 to 2011 (Chilkhaasuren & Baasankhuu, 2012). Although the increase in apartment units is encouraging, the amount of apartment units is still not sufficient. Due to Mongolia's long winter, the building season is quite short. Mongolia also doesn't produce sufficient building materials and has a limited number of well-trained construction workers (Adding Capacity, 2014). Since there isn't adequate housing available for Ulaanbaatar's citizens, the majority of residents live within *ger* areas. Due to rising housing demand, housing costs are also rising (Dari, 2014). From 2005 to 2013, the average apartment price rose from 350 – 500 thousand MNT to 1.6 – 2 million MNT per square meter (Mongolian Government Announced, 2013). Unfortunately, the majority of people residing in the *Ger*

District do not have the means to purchase an apartment. This is because the average *ger* district family brings in about 400,000 MNT a month (Galimbyek, personal communication, May 13, 2015). In most cases, the wealthiest people reside in apartments, followed by houses, and then finally *gers* (Mehta, 2004). It is likely that if there were a sufficient amount of apartment units, the prices would be lowered due to less demand. The amount of housing that is affordable to Ulaanbaatar citizens is exceptionally minimal (Mehta, 2004).

## **2.2 Pollution**

### **2.2.1 Air Pollution**

Ulaanbaatar is the city with the second worst air pollution in the world (Upton, 2013). Sources of air pollution vary. 4% of air pollution consists of dust from sources such as construction sites and the combustion of garbage, 6% comes from Ulaanbaatar's three thermal power plants, 10% comes from the exhaust of Ulaanbaatar's 200,000+ motor vehicles, and 80% comes from the consumption of coal to heat *Ger* District households. 184,000 stoves and 3,341 hot water boilers are used to heat these households (Galimbyek, 2015). Raw coal is the main fuel source powering the stoves and hot water boilers used to heat *Ger* District homes (Buyandalai et Al. 2013).

In a different climate, coal as a main source for fuel would not be as much of an issue. In Ulaanbaatar where there is a seven month long winter, it is an issue. The long winter accompanied by the *Ger* District's large population leads to the high levels of air pollution (Galimbyek, 2015). It doesn't help that Ulaanbaatar is located within a valley, allowing air pollution to just sit over the city (Air Pollution in, 2009). On average, a *Ger* District family consumes four tons of raw coal per winter costing about 110,000 MNT per ton (Galimbyek, personal communication, May 13, 2015). *Ger* District households consume approximately 800,000 tons of raw coal annually (Galimbyek, 2015). The burning of raw coal releases a number of harmful gases as well as particulate matter (see appendix 3 for particulate matter size explanation) (Galimbyek, personal communication, May 13, 2015).

Air pollution is something to take seriously with its negative impacts on health. Air particulate matter less than 2.5 microns in size can induce serious respiratory illnesses. On average, Mongolia's air pollution exceeds the

most relaxed World Health Organization standards by six or seven times (Curbing Air Pollution, 2012). In Mongolia's coldest months, air pollution levels can exceed Mongolian and international standards by 14 times (Galimbyek, 2015). In *ger* areas during the worst of winters, it is common to not be able to see more than ten meters in front of you early in the morning and in the evening, the day's coldest hours (D. Ganbold, personal communication, May 21, 2015). Fortunately, air pollution is not nearly as bad in the summer months as households don't need to burn coal to keep warm. Overall, the high levels of air pollution can be attributed to the lack of apartments as well as minimal infrastructure in *ger* areas.

### **2.2.2 Soil Pollution**

Soil pollution is another issue in Ulaanbaatar that is largely tied to the *Ger* District. The *Ger* District is the biggest contributor to soil pollution followed by factories, garbage and markets (oils, gasoline). Although Ulaanbaatar soil pollution is bad, it is much better in comparison to other large cities around the world (Interviewee 2, May 12, 2015). This is because soil pollution in Ulaanbaatar is more bacterial than chemical. Chemical soil pollution is found by the city's factories, which are concentrated on the west side of the city (E. Dorjsuren, personal communication, May 15, 2015; Interviewee 2, May 12, 2015). Soil samples have revealed *Salmonella*, *Cl.perfringen*, *E.coli*, and *Citrobacter* bacteria (Батхишиг, 2014). In a recently conducted study, 88% of soil samples taken exceeded standards (E. Dorjsuren, personal communication, May 15, 2015). Soil pollution in the *Ger* District can be attributed mainly to the lack of sewage systems. In *ger* areas, the large majority of households use pit latrines (MON: Ulaanbaatar Urban, 2013). A pit latrine is a large hole in the ground used as a toilet in each *hashaa*. Generally, each hole has a structure over it to provide privacy. The deposited feces has a significant negative impact on soil pollution as each *hashaa* has a pit latrine. Eventually, the hole in the ground will fill up with fecal matter and a new hole will have to be dug. This happens every 3-4 years. Since *hashaas* are limited in size, only so many new latrines can be dug. On a positive note, soil pollution in Ulaanbaatar is minimal for a large portion of the year as the majority of soil bacteria is killed by the below



freezing winter. Unfortunately, soil bacteria levels rise up again in the summer (Interviewee 2, May 12, 2015).

### **2.2.3 Water Pollution**

Similar to soil pollution, water pollution can largely be attributed to pit latrines and human feces. Yet another prominent source is the waste water produced by *Ger* District households. Water that is used for washing dishes, washing hands, and bathing is disposed of in the ground. Since the majority of *ger* areas are not equipped with sewage systems, households don't have much of an option when it comes to disposing of waste water. Adding to water pollution is air particulate matter that drops and enters waterways or finds its way into waterways by runoff (E. Dorjsuren, personal communication, May 15, 2015). You can also see that Ulaanbaatar rivers such as the Dund River is cluttered with garbage. The Dund River runs south between the 12<sup>th</sup> and 2<sup>nd</sup> *Khoroo ger* areas into the urban area of Ulaanbaatar

### **2.2.4 Garbage as a Source of Pollution**

Also contributing to pollution is the inadequate treatment of trash (Neupert et. Al, 2012). There is a lot of trash in *ger* areas. Trash lines *Ger* District roads in a very visible way (Interviewee 2, May 12, 2015). Trash collection in *ger* areas is infrequent leading many residents to dump their trash into the street. ("*Ger* Area Development", 2006). More funding needs to go into trash collection and treatment in order to reduce this source of pollution.

## **2.3 Public Health**

Pollution has been linked to issues of public health. President Elbegdorj said that pollution's negative affect on public health is a "disaster" (Pearly, 2011). Diarrhea and infectious diseases are common in *ger* areas due to high levels of pollution (E. Dorjsuren, personal communication, May 15, 2015). Respiratory illnesses are also common due to the city's air pollution (Curbing Air Pollution, 2012). From personal observation, very few Ulaanbaatar residents wear facemasks to help prevent the inhalation of airborne particulate matter. This is unfortunate as Ulaanbaatar's Air Quality is negligent.

Due to high rates of pollution related illness, health services struggle to keep up (Neupert et. Al, 2012). Along with respiratory illnesses, an increase in birth defects in recent years is presumed to be a result of air pollution. Heart defects in infants has shown a positive relationship with increased levels of coal related air pollution in recent years. In adults, respiratory diseases are one of the five most common causes of death in Ulaanbaatar (Pearly, 2011). Cardiovascular diseases are also linked to air pollution. In Ulaanbaatar, 27% of deaths are connected to air pollution (Allen, 2013). It is clear that pollution related to the *Ger* District affects public health and that changes need to be made in the foreseeable future.

## **2.4 Infrastructure**

Ulaanbaatar's *Ger* District has a severe lack of necessary infrastructure. This can be attributed to the rapid growth of *ger* areas. The type of housing that has increased the most is *Ger* District homes without proper utilities (Neupert, 2012). Approximately 55% of Ulaanbaatar's residents don't have central heating, sewage or running water (Mongolia's Infrastructure System, 2013). Currently, *ger* areas cover 21823 hectares compared to just 5857 hectares of apartment areas (Galimbyek, 2015). Sewage systems for the most are not existent within *ger* areas. Much of the *Ger* District has access to electricity but due to the higher cost of electrical heating, the majority of *Ger* District residents use coal (Mongolia: Urban Development Sector, 2008). Relying on electric heating can also prove to be hazardous in the *Ger* District. Power outages are common in *ger* areas and an outage in the winter would be dangerous for households relying on electricity for heat (Gendenbazar, personal communication, May, 15 2015; Mongolia's Infrastructure System, 2013).

The majority of *Ger* District households aren't connected to a water system. To obtain water, families fill up containers at local water kiosks and push the full containers back to their *hashaas* using a water cart. Water kiosks generally get their water from water trucks but as of recent, some water kiosks have been connected to the central water system of Ulaanbaatar by pipe. There are approximately 600 water kiosks located in *ger* areas each station providing water for up to 1,200 residents. It is law that each household is no

more than half a kilometer from a water station (Mongolia's Infrastructure System, 2013). Still a substantial percentage of the *Ger* District has not been connected with proper water, power, sewage and heating systems (Adding Capacity, 2014). Other issues with infrastructure include a lack of lighting and paved roads.

## **2.5 Crime**

Crime is also an issue faced in the *Ger* District. Although not one of the major issues, it is still something worth considering. In a *Ger* District development survey, participants indicated that the lack of street lighting in *ger* areas is an added risk to crime ("*Ger* Area Development", 2006). Because of the scarcity of streetlights, more crime occurs at night than during the day (Kamata, 2010). Another reason for crime is alcoholism. A reason for juvenile crime is that there aren't many recreation centers for adolescents. When these kids don't have much to do with their time, they end up causing problems (Kamata et. Al, 2010).

### **3. Changes**

#### **3.1 Housing and Infrastructure**

Ulaanbaatar's lack of affordable housing is something that the government is aware of and is addressing. In 2012, the construction industry increased by 25%. This was the outcome of a number of investment programs initiated by the government to increase housing and infrastructure (Mehta, 2004; Adding Capacity, 2014). In 2000, the "40,000" homes project was put into place by the local government. The aim of the program was to supply affordable housing for citizens residing on the outskirts of the capital city (Adding Capacity, 2014). This program is still in progress.

From 2000 to 2008, the construction sector grew steadily. From 2008 to 2009, construction output dropped considerably due to the international economic crisis. Since 2011, construction has picked back up and has been increasing at a quick rate thanks to increased government funding from mining earnings (Adding Capacity, 2014). In the World Bank's Doing Business Report, Mongolia ranks 74<sup>th</sup> in dealing with construction permits, improved from 107<sup>th</sup> in 2014 and 132<sup>nd</sup> in 2013 (Adding Capacity, 2014; World Bank, 2014). Mongolia shows improvement each year. Through the 2010-2016 New Development Program (NDP), the government hopes to construct 75,000 new residencies (Adding Capacity, 2014).

There are a variety of organizations that have started projects redeveloping the *ger* areas of Ulaanbaatar. Projects include transforming some areas into apartments while improving other areas by adding infrastructure. The government looks to connect 86% of Ulaanbaatar's population to infrastructure networks (water, roads, heating and sewage) by 2020 (Update on the Ulaanbaatar, 2013; Nomintovch). As of 2013, only 45% of Ulaanbaatar's population had access to such networks (Mongolia's Infrastructure System, 2013).

As of 2013, 40% of Ulaanbaatar's citizens lived in apartment units. By 2020 it is hoped that 58.5% of citizens will live in apartment units and by 2030 70.1% of citizens (Urban Transport Development, 2013; Nomintovch). As part of Ulaanbaatar City Master Plan 2020 which projects development of the city based off of population growth and economic outlook, Ulaanbaatar will have "adequate infrastructure facilities coupled with well defined land and

housing policies for all citizens, including those living in ‘ger’ areas” and “the city will be healthy, safe and environmentally friendly” (Update on the Ulaanbaatar, 2013; Nomintovch). Although vague, the plan is positive. Fortunately for the *Ger* District, it is at the forefront of priorities. As previously stated, 86% of Ulaanbaatar residents should have water, sewage, heating and roads by 2020 (Update on the Ulaanbaatar, 2013; Nomintovch).

Adding infrastructure to existing *ger* areas isn’t easy; neither is transforming *ger* areas into apartment blocks. To start the transformation process, the government selects which areas to develop, generally by how close they are to existing utility networks. Once an area is selected for development, development companies bid on the land. In some cases, development companies will split up the land. The general development process goes:

- 1) Family (land owner) and development company make an agreement on land value and compensation.
- 2) If the family chooses to exchange land for an apartment, the development company will find a place for the family to live (in some cases families will have the opportunity to move into an apartment building that the company has just recently finished).
- 3) The company clears everything from the land.
- 4) The soil is remediated to minimize pollution. This includes the digging and removal of existing pit latrines.
  - a. Government checks to make sure pollution level meets standards.
- 5) Government connects area to utility networks.
- 6) The company builds the apartment.
- 7) People move into the units (E. Enkhtaivan, personal communication, May 13, 2015; Interviewee 5, May 13, 2015)

There are many problems that development entities face when negotiating for each *hashaa*. Some people don’t want to move off their land. Some people want more money than is being offered. Some people don’t want to move because of their dogs. Sometimes there are more than one

family living within a *hashaa* in which case only one family can receive given compensation (E. Enkhtaivan, personal communication, May 13, 2015). How are these problems solved?

There are different ways to solve these problems; however it isn't always easy. In some cases, people are able to negotiate either more money out of the company or even a bigger apartment than initially offered. In some cases, the company will buy a new *hashaa* for the family in a different *ger* area ((E. Enkhtaivan, personal communication, May 13, 2015). If the family is uncooperative past this, the government will pressure them in some cases. For example, the government can cut their electricity. In an interview with a lawyer who wishes to remain anonymous, he or she said, "Mongolian government gives them [*Ger* District family] opportunities by offering them money, land or apartments. If government wants, they can just take the land. So people should take the money or the government will take it for free" (Interviewee 5, May 13, 2015). In my personal opinion, this is extreme, yet it shows drive to improve the city.

### 3.2 Pollution

As the number of apartments and levels of infrastructure are changing, so is pollution. Fortunately as changes are being made, air pollution has been on the decline since 2011.

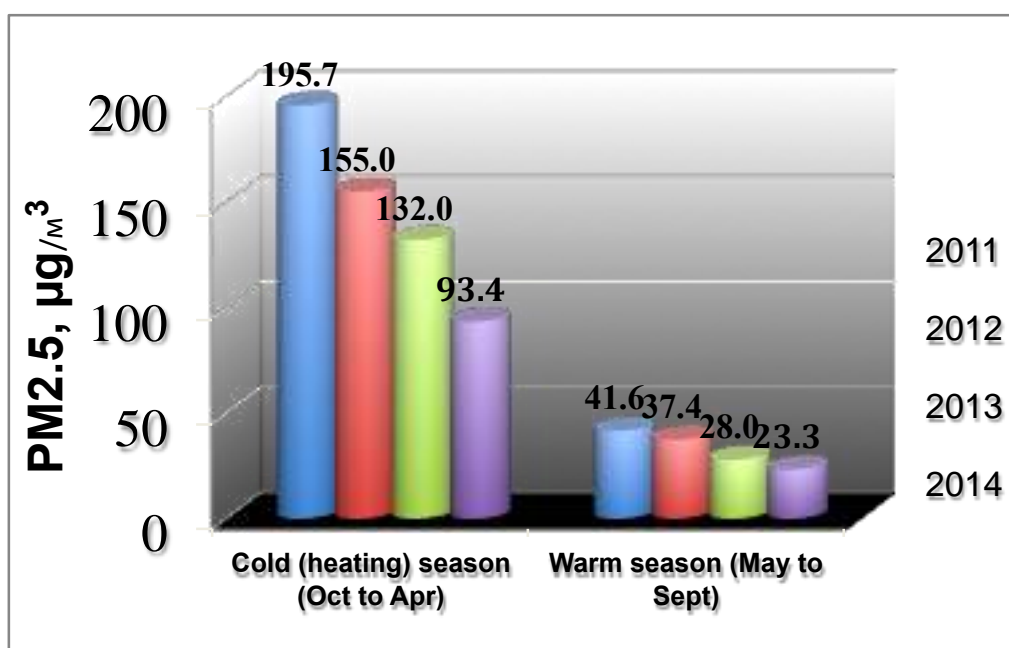


Figure 1: "PM2.5, µg per cubic meter (daily average)" (Galimbyek, 2015).

In addition to increased apartment units and increased infrastructure, other factors should be considered for the decrease of PM 2.5 air pollution. For one, this past winter wasn't as severe as most Mongolian winters (D. Ganbold, personal communication, May 21, 2015). A warmer winter means less coal needs to be burned to heat *Ger* District households.

Another reason for decreased air pollution is better forms of coal such as semi-coking coal. Compared to raw coal's 30-40% volatile matter, semi-coking coal consists of 15% volatile matter meaning that it burns for longer. It also burns more completely meaning lesser amounts of particulate matter released into the atmosphere. Unfortunately, semi-coking coal is almost twice as expensive as raw coal, even after the government subsidized it by about 50,000 MNT per ton. The government wants to provide 12,000 homes with semi-coking coal yet producers only manufacture 3,000 tons annually (Galimbyek, personal communication, May 13, 2015). If more semi-coking coal can be produced, hopefully the price will decrease, enabling more households its use. Different forms of hard fuel are constantly in testing in attempt to find a fuel that is both cost affective and environmentally friendly. For example, in a day spent in a hard coal testing facility I witnessed the testing of a biomass –coking coal composite from Mozambique. It is possible that they were testing this new method since Mongolia has much access to biomass in the form of dung as well as access to coal. New methods of heating homes need to be adopted to lower air pollution levels to meet standards.

In addition to improved forms of fuel, a new improved Top Lit Updraft Stove (TLUD) has been created and implemented. This stove is lit from the top, more energy efficient, better for cooking food, and burns for longer. While a traditional bottom lit stove will burn 4-5 kilograms of coal in 4-5 hours, the improved stove burns the same amount of coal in at least 8 hours. A longer burn means less coal is used and therefore less money is spent by households on coal (Galimbyek, personal communication, May 13, 2015).

What makes the Top Lit Updraft Stove burn for longer? This is a question I had to ask myself. Think of when you light a match. If you light it then proceed to hold it upside down, the flame will rapidly burn up the shaft of the match, allowing you to only hold it for about 5 seconds before the flame

reaches your hand. If you light the match and hold it right side up with the flame at the top, the match will burn for up to 15 seconds before the flame reaches your hand. This is a simplified explanation yet nonetheless aids understanding. In addition to burning longer, the coal burns more completely (Galimbyek, personal communication, May 13, 2015).

From 2011 – 2012, the Millennium Challenge Account Mongolia (MCA) provided 100,000 *gers* with Top Lit Updraft Stoves. A great feat, yet it comes with additional challenges and therefore responsibility. Mongolian's that live in *gers* are used to using the traditional bottom lit stove. As Galimbyek stated, "new stoves equals a change in culture and routine, have to change habituality [sic]" (Galimbyek, personal communication, May 13 2015). Adjustment of habit takes time. To educate people on how to use the new stoves, World Bank employees go to *Ger* District schools and teach students how to use the new stoves in hope that the students can then in turn teach their families (Galimbyek, personal communication, May 13 2015).

In terms of soil and water pollution, levels can be minimalized if *ger* area homes are connected to sewage systems. The majority of soil and water pollution is caused by *Ger* District pit latrines and the disposal of wastewater. A relatively new service that has been put to use involves the installation of large plastic linings into *Ger* District latrines. When the pit fills up, a truck comes and draws all of the waste out of the pit into the truck. This allows the *hashaa* to have one constant toilet rather than having to dig a new toilet when the original fills up. This service has been around for 3-4 years and unfortunately is not utilized by many households (Interviewee 2, May 12, 2015). If used by more households, this service can be a good, temporary method to reduce soil and water pollution until the *Ger* District is equipped with necessary infrastructure. Even with the increasing population, there is hope that pollution levels will continue to decrease due to the improvement of infrastructure. Given the lack of infrastructure, specific to the *Ger* District, is the leading cause for Ulaanbaatar's pollution issues. If the Ulaanbaatar City Master Plan 2020 succeeds, there is hope that future pollution levels can meet Mongolian and international standards.



### **3.3 Crime**

One way crime can be reduced is by adding more streetlights, especially when people in *ger* areas often have to walk on barren streets with few other people on them (Kamata et. Al, 2010). If alcoholism can be reduced, it is likely that crime can be too. A lot of this has to do with a better quality of life. An anonymous interviewee stated, “when people live a cleaner lifestyle, they also generally live better, less alcoholism” (Interviewee 5, May 13, 2015). Other steps forward have been taken to reduce alcoholism such as raising the drinking age to 21 and not allowing the sale of alcohol on the first of each month. Whether these steps have led to change is unclear.

## **4. Methods**

I conducted research in four primary ways. The first way included literary research by reading online reports and articles relevant to the *Ger* District. The second included conducting interviews with people living within the *Ger* District, people implementing change within the *Ger* District, as well as general people affected by the *Ger* District. The third method was a survey dispersed to Ulaanbaatar Citizens to gain insight on attitudes regarding the *Ger* District. The final method of research I used was observations. Certain limitations include the language barrier. Research would have been easier if it was conducted all in one language or if I was fluent in Mongolian. I also feel that I could have benefited from having more time. I could have conducted further surveys asking questions I thought of after analyzing my results. Some thoughts for further research are addressed in the conclusion.

### **4.1 Research**

#### **4.1.1 Literary Research**

Literary research was important for me to get a general understanding of the *Ger* District, including but not limited to related issues and change. This step was vital by allowing me to gather information in order to further develop my research. My initial goal from reading literature was to help me expand the types of questions I should be asking both the people I interviewed, as well as the surveys that I distributed. It was necessary for me to have a grasp on my research topic before knowing how to move on further.

Through reading reports, I found pertinent information on demographics, population trends, pollution trends, as well as general purpose as to why people choose to move to Ulaanbaatar. Through literary research, I was best able to understand how the city of Ulaanbaatar has changed over the years and how this change directly relates to the *Ger* District. I was also able to compare trends to determine if there was any correlation. I also used a literary resource as support for why people may prefer houses to apartments. As well as finding literary resources online, I was sent literary resources by a couple of the individuals I interviewed.

#### 4.1.2 Interviews

I found interviews to be a valuable source of information. Through my interviews, I have gained much more in depth information from individuals that work directly with *Ger* District related issues as well as development projects. I have interviewed individuals directly involved with development including members of government as well as a lawyer. The members of government I have interviewed work with assessing the different pollution types and their sources. All interviews conducted with these people are valuable as *ger* areas are the point source for much of Ulaanbaatar's pollution: air, soil and water. Development lawyers serve as middlemen who negotiate between the involved stakeholders: the government, the development company, and of course, the people living within the *ger* area being developed. This interview was valuable as I was able to learn about the issues the lawyers face in trying to approve *ger* area land for development. I also interviewed individuals living within the *ger* areas to gain their opinions about the development of the areas they live within. People within *ger* areas I interviewed includes a man who is a Shaman, a family who just recently moved to Ulaanbaatar as well as a man and woman who live in an area with no current development plans. It is my belief that I gained a better perspective by interviewing different people living within different *ger* areas.

Overall, I interviewed a total of 11 people. One of the interviewees is a lawyer, three interviewees were government workers, five interviewees are *Ger* District Residents and two interviewees wished to remain anonymous. In my best effort to keep those who wished to remain anonymous, no personal information was given including occupation. Since the people I interviewed had many different backgrounds, I didn't have a set list of interview questions. I asked different questions in each interview based off the person I was interviewing. Interview questions are recorded in my field work journal.

I feel that the people I interviewed well represent my topic. One interview did not go as I hoped, therefore I did not use any information from it. Although I know the interviewee is knowledgeable on my topic, he wished to only talk about the work he does which isn't completely relevant to my topic. I would have liked to meet with someone who works for Ulaanbaatar City Urban Planning and someone who works in public health. I had a

meeting set up with an Ulaanbaatar City Urban Planning worker for May 29, 2015. Unfortunately my translator had an accident and didn't show up. It was too late in the ISP period to reschedule.

#### **4.1.3 Survey**

The purpose of the survey (Appendix 1) was to gain insight on the attitudes District of Ulaanbaatar citizens of the *Ger* District. For the purpose of my research, I am interested in the attitudes toward the *Ger* District of both people living within *ger* areas as well as urban areas since the *Ger* District is a major cause of pollution affecting public health. The survey had a total of 10 questions, four of which were multiple choice, the other six were open ended (the 10 questions included descriptive questions such as age, sex, and occupation).

To conduct this survey, I went to Narantuul Market on May 20<sup>th</sup>, 2015 and passed out the survey to both shopkeepers and shoppers alike. Narantuul is the biggest market place in Ulaanbaatar where people can buy nearly anything. I chose Narantuul to distribute surveys since it is a central market that is visited by many people daily. It is also the place that I believed would be best for getting a wide range of survey participants from all over the city. Here I struggled more than I expected finding participants. The majority of shoppers were at Narantuul solely to shop and showed little interest in taking the time to take the survey. I had better luck with the shopkeepers, as they seemed to have more time on their hands. After about two and a half hours I collected a total of 25 surveys.

After I found myself struggle handing out surveys the first time, I decided to recruit the help of Tulga, a friend I have made in my time here in Mongolia. The final 25 surveys were passed out at Chinggis Khan Square on May 24<sup>th</sup>, 2015, another central location in Ulaanbaatar. I figured here I would receive a mixed audience as I did at Narantuul. This time handing out surveys turned out to be a much more positive experience for me than the first time. For one, it was fantastic having Tulga's help. The combination of having another person to hand out surveys as well as someone who is a native Mongolian speaker really sped up the process. Second, there were many more people at Chinggis Khan Square who were just sitting on benches and

therefore much more approachable than the shoppers at Narantuul. These two factors made the survey process much shorter. Unfortunately, one of the surveys returned had been filled out by someone not older than 18. This survey was disposed of without looking at anything other than age.

#### **4.1.4 Observations**

Although observations played only a minor role in my research, I feel that some observations I made are valuable. Throughout the course of my research I spent approximately 45 hours in the *Ger* District including an overnight spent with a family in the 13<sup>th</sup> *Khoroo*. I came in contact with this family through Ch. Ulziikhishig, a long time past employee of SIT Mongolia. I stayed with the sister of Ch. Ulziikhishig's wife. The majority of useful observations made were in the time spent in the overnight. This is when I was most immersed in the daily life of a *Ger* District family, completing jobs such as retrieving water from the local water kiosk.

#### **4.2 Translation**

Over the course of my research, I received the help of two translators. The first is Ch. Ulziikhishig who translated interviews with six of my interviewees. Compensation for interview time was offered and declined. He wished to only have a small amount for gas money. Being that he spent a great deal of time with me and it was apparent to me that he was being very polite, I gave him an amount that I thought to be reasonable.

I also received translation help from Battulga Gendenbazar in two interviews. He also helped me translate my 49 surveys. For all of his help, compensation was offered multiple times and repeatedly declined. However, I was able to compensate him in the form of a nice lunch after we finished collecting surveys at Chinggis Khan Square on May 24<sup>th</sup>, 2015.

#### **4.3 Ethics**

As far as I am concerned, all ethical procedures were adhered to. Everyone I interviewed was given a consent form in his or her preferred language (either Mongolian or English) preceding the interview. The consent form gave a description of my study as well as a notice of participant's rights.

In the rights notice, the participant was informed that they were able to stop the interview at anytime they wished. The rights section also included information in three sections as follows:

(1) **Privacy:** all information you present in this interview may be recorded and safeguarded. If you do not want the information recorded, you need to let the interviewer know.

(2) **Anonymity:** All names in this study will be kept anonymous unless the participant chooses otherwise.

(3) **Confidentiality:** All names will remain completely confidential and fully protected by the interviewer. By signing below, you give the interviewer full responsibility to uphold this contract and its contents. The interviewer will also sign a copy of this contract and give it to the participant.

In this paper I will only use the names of the interviewees from who I have received permission. To obtain permission, I verbally asked if I would be able use their name within my report. If they said I could, I made a note at the top of the interview transcript. For the people who wished to remain anonymous, I carefully made sure not to include any identifying information.

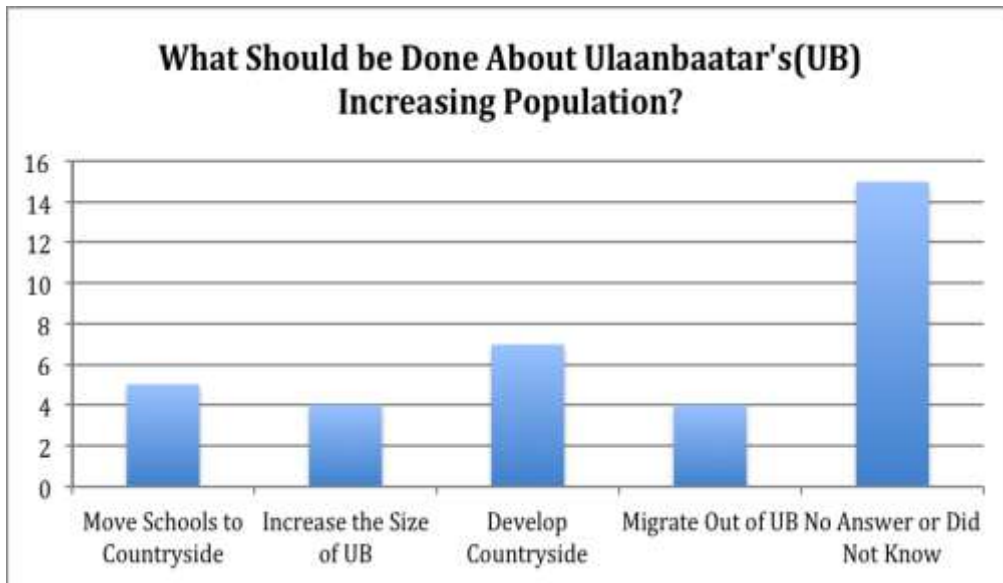
Compensation was offered to the family that I stayed with in the *Ger* District. I felt that it was the least I could do after spending approximately 24 hours in their home, which included three meals. They also took me around their area showing me different important locations as well as including me in the process of retrieving water from a water kiosk. They respectfully declined the money I offered.

Indicated in my human subject review I said I would have approximately five participants under 18 and approximately 20 participants over the age of 18. The numbers for this differed in my actual study. I didn't use anyone under 18 to avoid conflicts with the human subject review. I ended up having approximately 60 research participants 18 or older including interview subjects as well as survey contributors.

## 5. Results

### 5.1 Survey Results

The following figures are derived from the surveys that were collected. In this section, results will just be reviewed. In the discussion section (Section 6.), they will be discussed.

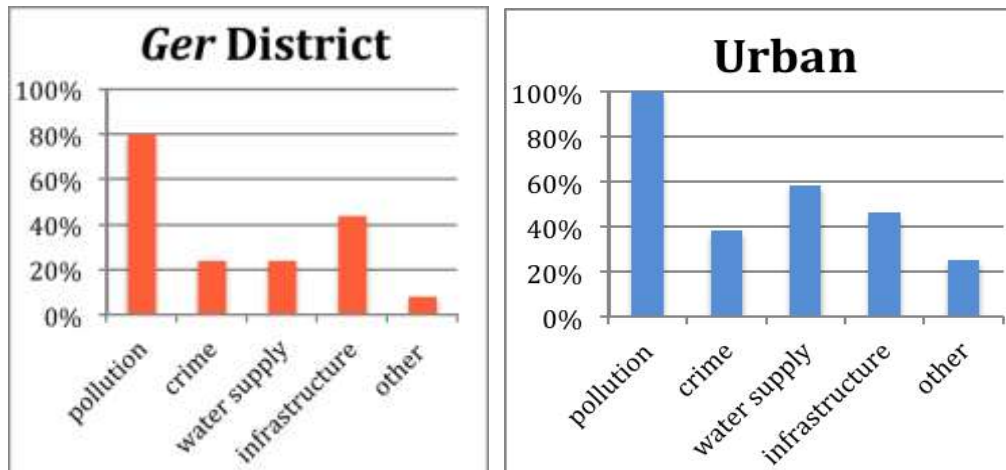


**Figure 2:** (Survey Question 7) The question asked “what do you think should be done about Ulaanbaatar’s increasing population?” X-axis shows answers given and Y-axis shows frequency of answers given **Note:** Only five most common answers shown.

Survey question number 7 was open ended. Unlike question number 6 (figure 4), the majority of participants didn’t answer or didn’t know what should be done about Ulaanbaatar’s increasing population. The second most popular answer at seven people was that the countryside should be better developed. The majority of suggestions as to how to better develop the countryside were through the creation of more high-quality jobs at the *soum* level. Moving schools and universities to the countryside or outside of Ulaanbaatar was suggested by five participants to encourage families to move to these areas for their children’s education instead of Ulaanbaatar. By moving schools and universities outside of Ulaanbaatar, it was also suggested that the population of Ulaanbaatar would decrease by the exiting of students to the school areas. These schools would have to be dorm-style.

However, being an open-ended question, it is interesting that multiple people answered with potential solutions that I hadn’t thought of. I had

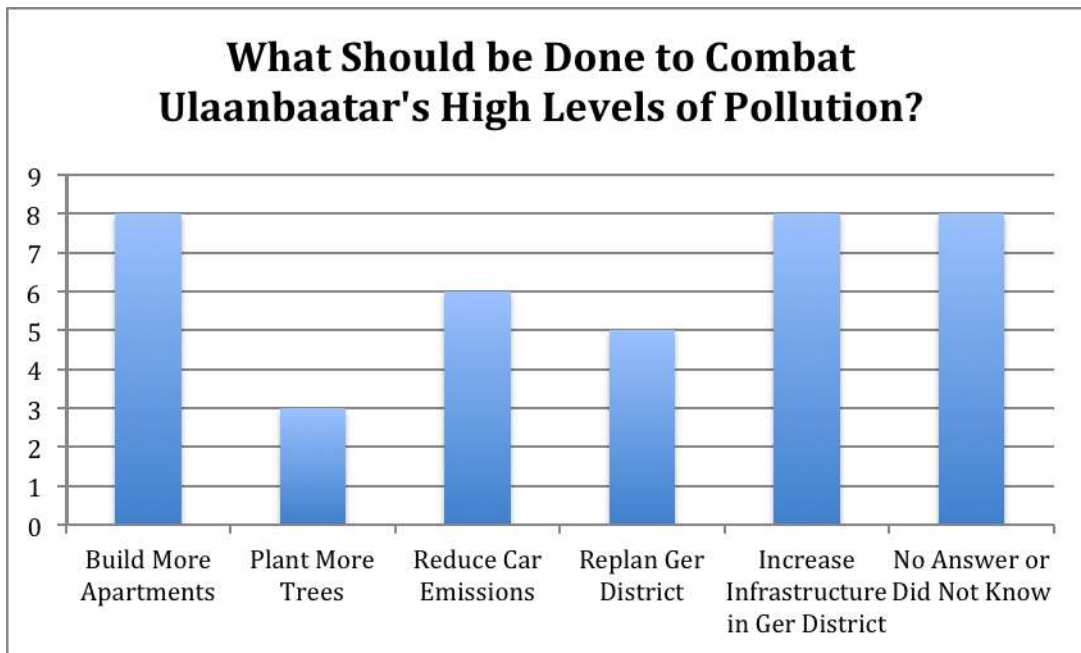
anticipated that the majority of people would have answered with the solution of building more apartments. Instead people offered suggestions such as schools and universities should be moved to the countryside, that the size of Ulaanbaatar should be expanded, the countryside should be better developed and that people should migrate out of Ulaanbaatar.



**Figure 3:** (Survey Question 8) *Perceived problems of the Ger District given by Ulaanbaatar City residents. X – axis shows answers given and Y – axis shows percentage of people who selected each answer. Left graph shows results of Ger District residents, the right graph shows results of the urban residents surveyed.*

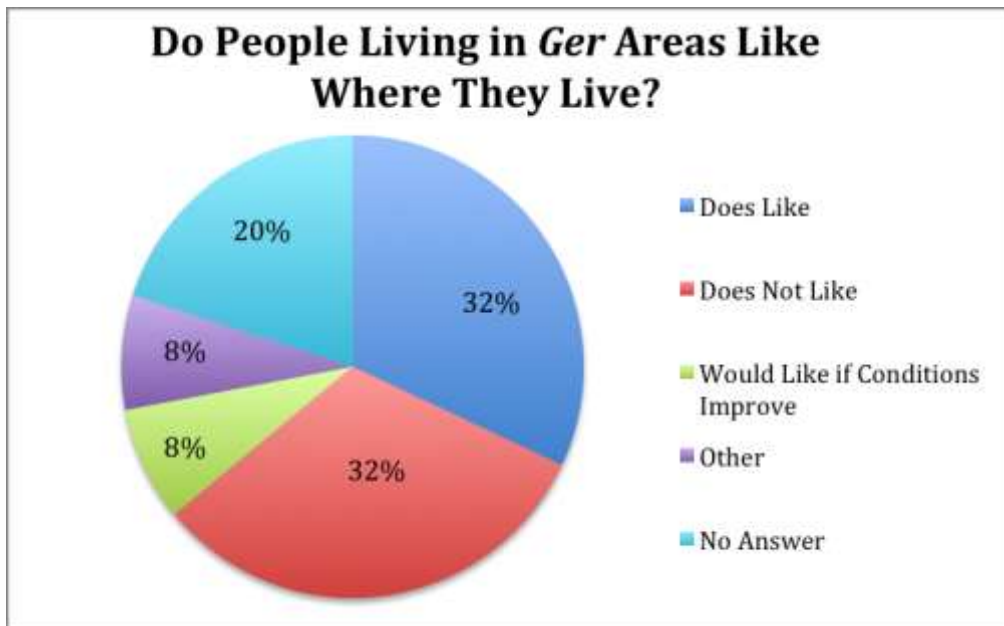
This figure shows the percentage of people surveyed who believed each listed issue is actually an issue of the *Ger District*. As shown, both *Ger District* and urban residents believe that pollution is the biggest problem; 80% of *Ger District* residents surveyed believe that pollution is a problem while 100% of urban residents surveyed believe that pollution is a problem. Overall, higher percentages of urban residents identified each potential issue as an issue compared to *Ger District* residents. The most common other issue cited was the need for streetlights and the amount of excess trash at 4% of total people surveyed each. This figure shows that the majority of people surveyed believe that there are issues associated with the *Ger District*.





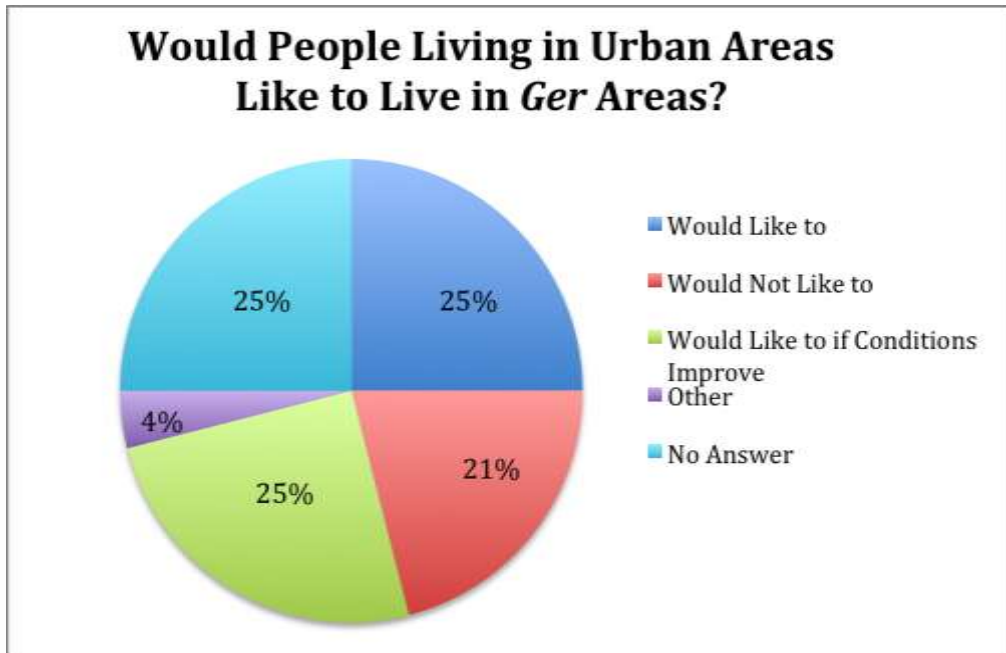
**Figure 4:** (Survey question 6) The question asked “what do you think should be done to combat high levels of pollution in Ulaanbaatar?” X-axis shows the answers given and Y-axis shows the frequency answers given. **Note:** Only six most common answers shown.

This question was open ended and still received many of the same answers from different participants. The most commonly stated answers are the need to build more apartments and the need to increase the infrastructure in the *Ger* District at eight each. Eight people also either didn’t answer the question or stated that they did not know what should be done to combat Ulaanbaatar’s high levels of pollution. As well as increasing the number of apartments and the level of infrastructure, participants suggested that it needs to happen at an accelerated rate. The types of infrastructure suggested includes hot and colder water piping, electric heating systems, or other heating systems that do not involve the use of coal burning stoves or coal burning hot water boilers. To make electric heating cheaper, it was suggested to have more electric power plants built within the city. The majority of the people surveyed were aware of possible solutions to help combat pollution in Ulaanbaatar.



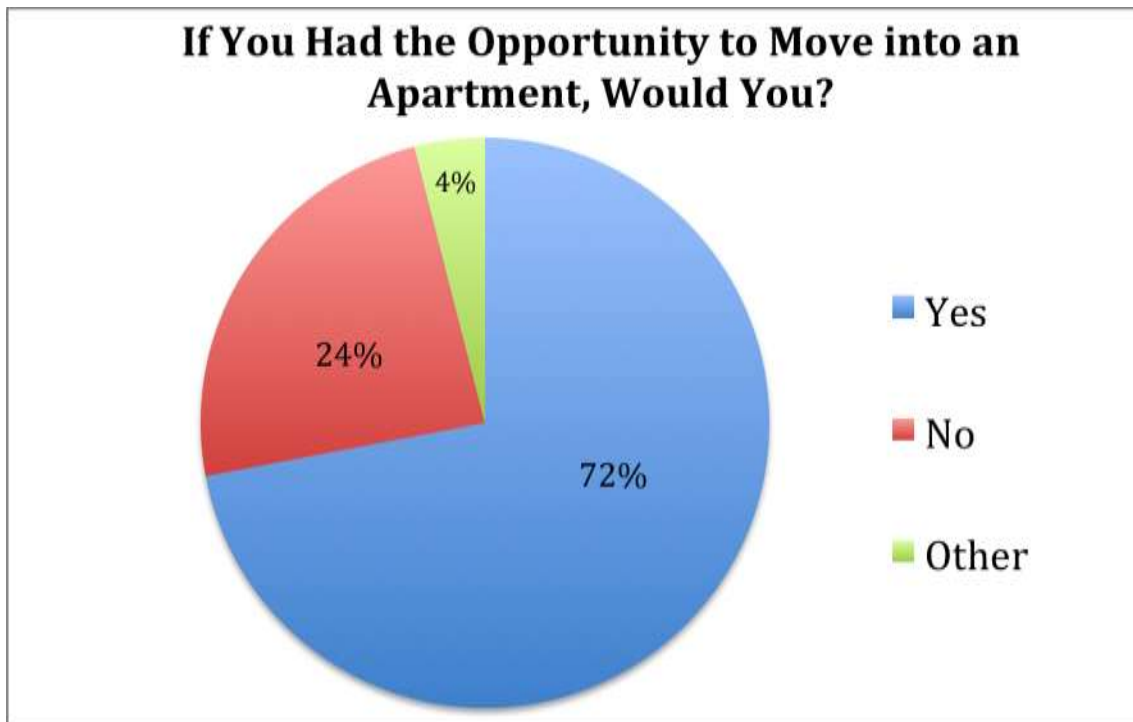
**Figure 5:** (Survey question 9) This question asked whether people living in ger areas like where they live. Each section represents the percentage of people that gave that answer.

This chart shows the answers given by Ger District residents in percentage. 64% of Ger District residents surveyed gave an answer that indicated whether they like living in the Ger District or not. 32% of the people surveyed said they do like living in the Ger District while 32 % stated that they do not like living in the Ger District. 8% of participants said they would like living in the Ger District with improved living conditions. The common other answer was that they live in the Ger District because they do not have a choice. From these results, I can infer that if conditions were to improve, 40% of current Ger District residents would like living in the Ger District.



**Figure 6:** (Survey question 9) This question asked those living in urban areas if they would like to live in *ger* areas. Each section represents the percentage of people that gave that answer.

This chart shows the answers given by residents of urban areas by percentage. In this case, 25% of urban residents surveyed stated that they would like to live in *ger* areas while 21% said they would not like to. Another 25% stated that they would like to if conditions improve. 25% of participants didn't give an answer. Reasons as to why people would like to live in the *Ger* District includes but isn't limited to the ability to take walks, sit in the sun, and because of the lower costs. I can infer that if conditions were to improve, the majority of people living in urban areas would like to live in *ger* areas.



**Figure 7:** (Survey question 10) This question asked Ger District residents if they would move into an apartment if they had the opportunity to.

For this question, 72% of Ger District residents surveyed said they would like to move into an apartment if they had the opportunity to do so. 24% of the Ger District residents surveyed stated that they wouldn't move to an apartment if they had the opportunity to do so. 4% (one person) answered with other. This person didn't select either answer and instead wrote that she would like to remain in the ger district if it can meet quality requirements.

## 5.2 Interview Results

Results from four interviews conducted with five interview subjects from the Ger District are quite similar. All interviewees were born outside of Ulaanbaatar and moved to the city within their lifetime. Two interview participants moved to Ulaanbaatar in 1995 (father and son), two interview participants moved to Ulaanbaatar in 1988 (husband and wife), and one interview participant moved to Ulaanbaatar in 2009. The motive for each move was for a more sophisticated education.

All of the participants stated that they like where they live (Ger District). Reasons include more freedom, close neighbors and relatives, and having a yard. Not having showers, flush toilets, and pollution are negative

aspects of the *Ger* District that were highlighted. One participant stated that he tries his best to only use the toilet at his work because he finds the pit latrine to be disgusting. Elevators, noisy neighbors, just four walls (describing an apartment), not being able to garden, not being able to have dogs and having to pay for parking are stated reasons for not liking apartments. Yet, four of five participants stated that they would live in an apartment if they were presented the opportunity under certain conditions. The main depending factor is how many rooms they can acquire. The couple I interviewed shares their *hashaa* with the families of two of their children. If a development company wished to turn their land into an apartment, they worry that the development company wouldn't offer sufficient rooms to house all three families. In this case two families would be displaced. This calls attention to one of the previously discussed issues between families and development companies when it comes to development.

## 6. Discussion

### 6.1 Ulaanbaatar's Increasing Population

Ulaanbaatar's increasing population is important to consider when looking at change. In 1956, 14% of Mongolia's total population lived in Ulaanbaatar. As of 2010, 43.6% of Mongolia's total population lived in Ulaanbaatar. Out of Mongolia's population, 52.8% of residents were born elsewhere (Chilkhaasuren & Baasankhuu, 2012). The large percentage of those born outside the city shows why the city has been sprawling, especially in *ger* areas. Inward migration over the past 15 years is the primary cause for the lack of housing and infrastructure in Ulaanbaatar (Adding Capacity, 2014).

For this survey question, participants were asked what should be done about Ulaanbaatar's increasing population. For this question, the majority of participants didn't answer or selected that they don't know. In light of this, it is a rather complex issue that takes time to think of the best solution, perhaps more time than most survey participants had. Seven participants said that the best solution is developing the countryside, mainly at the *soum* level. One participant wrote that industry in the countryside needs to be better developed in order to create more jobs. Another stated that lack of jobs is one of the primary reasons for why people move to Ulaanbaatar. An additional participant stated that *aimags* and *soums* need to be better developed just to "make it more livable."

The third most popular answer was to move schools to the countryside. Five survey participants said that by moving schools outside of Ulaanbaatar, less people would be encouraged to migrate to the capital city. In talking to Tulga, he agreed that it would be good to relocate universities outside of the city. He stated that schools should be moved to the suburbs, beyond the *Ger* District. By doing this, things will change. The population of the city will be reduced. Families that have moved to Ulaanbaatar for their children's education in the past would have moved to these new places with the schools instead. If schools are moved outside the city, families from the countryside will move to these new areas instead (B. Gendenbazar, personal communication, May, 27 2015). Moving schools outside of the city will reduce population growth, better allowing the city to provide for its existing residents.

## 6.2 Perceived *Ger* District Problems

In the survey I conducted, participants were asked to select what they believe to be *Ger* District related problems (Figure 3). The answers were broken into two groups: one being the answers of *Ger* District residents, the other being the answers of urban area residents. For both groups, the problem most frequently selected was pollution. 80% of *Ger* District residents selected pollution as a problem while 100% of urban area residents selected pollution as a problem. I find this to be interesting and in a way logical. Pollution, water supply and infrastructure directly affects both *ger* area residents and urban area residents. Yet, why does only 80% of *Ger* District residents believe that pollution is a problem when they are just as much affected by it as the 100% of urban residents surveyed that believe pollution is a problem?

There could be a number of reasons why. Perhaps some of the individuals living within *ger* areas who reside within the thick of the pollution have grown accustomed to it. When I spent a night with a *ger* area family, I asked the husband what he thought of the pollution, specifically the air pollution. He stated that it seems like the pollution is getting noticeably worse as the population grows, and that the smoke now visibly reaches the mountains during the winter (an exception being this past winter due to warmer temperatures). Even with all of this, he stated, “pollution is not as bad when you are used to it” (D. Ganbold, personal communication, May 21, 2015). Perhaps the 20% that said pollution is not a problem share a similar mindset to Ganbold.

In “The House as a Symbol of Self” by Clare Cooper, she discusses how people often see their house as a representation of self (Cooper, 1974). It is possible that this is true in this case, and that not every *Ger* District survey participant wanted to pin the pollution to the place that they call home. This might be another reason why 20% less of *ger* area residents than urban area residents chose pollution as a problem of *ger* areas. It is probably a lot easier for urban area residents to blame the pollution on the *Ger* District than it is for *ger* area residents to take the blame upon themselves.

Each *Ger* District issue was selected by a higher percentage of urban area residents than *ger* area residents. The largest difference between what

each grouping of residents selected was for the issue of water supply. 58% of urban residents chose water supply as a problem compared to only 24% of *Ger* District residents. For one, this could be the case because it is what the *ger* area inhabitants know. Perhaps to them, going to a water kiosk every other day (B. Gendenbazar, personal communication, May 27, 2015) is not that bad because it is what they know. For *Ger* District residents who migrated from the countryside, it is possible that water access is much better than what it was where they came from. In an interview with Namsrai, a *Ger* District inhabitant of six years, he reflected on how much more he likes life now than he did before as a herder. He stated that everything is so close to where he lives now compared to before (Namsrai, personal communication, May 27, 2015).

In a 2007 survey, nomad households and *Ger* District households were asked about their frequency of water purchase. Approximately 53% of nomad households selected no response indicating that they get their water from rivers, wells etc. and do not buy water (Sugimoto et. Al, 2007). Although not paying for water might sound great, the process of going to a water kiosk in the *Ger* District and filling up containers by hose seems to be more convenient than filling up containers from a river. Even when having to buy water, the cost is not a problem for most families at about \$.01 USD for one liter (Mongolia's Infrastructure System, 2013).

There is also a chance that some of the people surveyed from urban areas once lived in a *ger* area. Since they now live with running water, they see life as much easier than when they had to get water from a water kiosk. One common issue caused by the lack of running water is the ability to shower. In the 2007 survey, 56.1% of *Ger* District participants stated that the inability "to bathe at home" is the number one difficulty in terms of water use (Sugimoto et. Al, 2007). In an interview with Ganbold, the one difficulty of living in the *Ger* District he stated is the inability to shower (D. Ganbold, personal communication, May 21, 2015). It is clear that water access is at least a problem in the eyes of some of *ger* area residents.

On the positive side, 96% of those I surveyed indicated at least one problem of the *Ger* District. It is good that in general people are aware of issues. Those aware of issues are more likely to want change in order to better



their surrounding environment and life in general. By decreasing *Ger* District related issues, the quality of life can be improved for residents of *ger* areas and urban areas alike.

### **6.3 Combatting UB Pollution**

As part of my survey, I asked Ulaanbaatar citizens their opinions on what should be done to combat high levels of pollution. The question was open ended and to my surprise and delight, many people gave similar answers to one another. Comparable to my point at the end of the previous section regarding awareness, this question's results show considerable awareness beyond just problems. The answers provided by participants for this question show strong recognition of what can be done to bring change.

The two most common answers given by participants include building more apartments and increasing infrastructure in the *Ger* District. Eight participants suggested each. Along with these two frequent answers, eight people either didn't answer or stated that they didn't know. Along with building more apartments and increasing infrastructure in the *Ger* District, five people answered that the *Ger* District should be re-planned. Combining these three answers, a total of 21 participants made suggestions that involve improving *ger* areas.

### **6.4 Living in the *Ger* District**

For this question, *Ger* District residents were asked if they like where they live, and urban residents were asked if they would like living in the *Ger* District. For current *ger* area residents, an equal amount of participants stated they liked living in the *Ger* District as those who stated that they don't at 32%. However, an additional 8% stated that they would like living in the *Ger* District if conditions such as infrastructure improved.

For those living in urban areas, 25% said that they would like to live in the *Ger* District while 25% said they would not. An additional 25% of participants stated that they would like to live in the *Ger* District if conditions improve. This means that at least 50% of urban residents surveyed either have or would consider living in a *ger* area. This total 50% is greater than the 40%

of *Ger* District residents that said either that they like living in the *Ger* District currently or that they would like it with improved conditions.

In my interviews with *Ger* District residents I asked if they like living where they do. All five interviewees stated that they like living in the *Ger* District. When I asked Gendenbazar about what he likes about the *Ger* District he said “everything - you should like where you live. Here, I am close to everything, bus stop, the shop, I don’t need to go downtown, everything I want is here” (Gendenbazar, personal communication, May 15, 2015). Ganbold stated that he likes the freedom. It is very easy to go outside, and you don’t have to take an elevator. He said living in the *Ger* District is cheaper than living in an apartment as a reason for why he likes where he lives. Compared to an apartment, no one in the *Ger* District bothers you. In apartments you have to worry about noisy neighbors, which not the case for him in the *Ger* District (D. Ganbold, personal communication, May 21, 2015)

What is it about the freedom of the *Ger* District that participants like? This is something that Clare Cooper discusses in “The House as Symbol of the Self”. A recent survey highlighted in her essay, 85% of United States citizens that were surveyed stated that they would rather live in a house than an apartment. Unlike owning an apartment in Ulaanbaatar, *Ger* District residents can do as they please with their *hashaa* and home. Other studies within Cooper’s essay show that many “people of all incomes and backgrounds will tend to describe a free-standing, square, detached, single-family house and yard” (Cooper, 1974) as their perfect home. I believe that this holds true many of the people I surveyed and to all of the *Ger* District residents I interviewed.

In my interview with Namsrai who has only been in Ulaanbaatar with his family for six years, he truly emphasized how much he likes where he lives. He stated that he doesn’t miss his old life and everything about where he is now is better. Currently, his family lives in a *ger*. He said that he wants to build a house eventually and that he likes having a yard (Namsrai, personal communication, May 27, 2015). Ganbold also stated that he likes his yard. In his *hashaa* he keeps a garden, something he couldn’t do if he didn’t live in the *Ger* District. He and his wife indicated that if infrastructure improves in the *Ger* District, they would rather stay where they are now over moving to an

apartment (D. Ganbold; P. Oyunbileg, personal communication, May 27, 2015).

Similarly, Gendenbazar likes having his yard. He stated that he likes making things. In his yard, in addition to his *ger* and the house that he built, he has a gazebo. The gazebo has a U-shaped bench with a table. From the gazebo, he can gaze out over the *Ger* District and down on the urban areas. This gazebo is where he sits for much of the day in the warmer months. I believe this is a strong example of the “individual expression of self” that Cooper discusses regarding homeowners. By adding features such as the gazebo to his property, Gendenbazar is making his *hashaa* his own. Doing this makes what is his unique, better allowing for him to connect with where he lives (Cooper, 1974).

Perhaps this is also why 50% of those living in urban areas surveyed stated that they would like to move to the *Ger* District (25% under current conditions, 25% under improved conditions). Living in apartments, they might feel less freedom, and more of an inability to identify with and individualize where they live. If urban residents moved to a *ger* area, they could build up or individualize their *hashaa* in a way that they choose to best represent themselves. Yet in the survey results, most participants that stated they would move to the *Ger* District if conditions improve include pollution, lack of infrastructure and overall comfort as primary factors.

The final survey question asked, “if you had the opportunity to move into an apartment, would you?” To this question, 72% of survey participants answered yes. I find this in ways interesting as it compares to only 32% of participants that stated that they do not like living in the *Ger* District. Yet, I believe that it makes sense. From my research, it is my belief that just because the majority of people surveyed would move to an apartment doesn’t mean that they don’t like where they currently live. Although many people living in the *Ger* District like where they live, they recognize that certain aspects pertaining to quality of life can be improved by living in apartments.

As Gendenbazar stated, “you should like where you live” (Gendenbazar, personal communication, May 15, 2015). It is possible that many other *Ger* District residents would agree. Even though he likes

everything about where he lives, he stated that he would too live in an apartment if he had the option. In the study conducted by Caldieron and Miller, 61% of *Ger* District residents surveyed said that they would like to move to an apartment (Caldieron & Miller, 2013). This result is very similar to the 72% that said they would like to live in an apartment in my survey. In Caldieron and Miller's research they also found that 68% of survey participants were either averagely satisfied, satisfied or very satisfied with their current dwelling showing recognition for the better quality of life apartments provide (Caldieron & Miller).

## 7. Conclusion

### 7.1 Findings

The purpose of my research was to look at problems associated with Ulaanbaatar's *Ger* District and to assess changes that are in the process of being made. The research's aim was to analyze the attitudes of Ulaanbaatar citizens regarding the *Ger* District in terms of its problems and changes. As deliberated, there are clear issues regarding the *Ger* District, main issues being pollution, lack of infrastructure, access to water and crime. The majority of survey participants recognized that there are problems related to the *Ger* District, which is critical in order for change to be implemented.

It was found that much change is happening in attempt to solve issues of the *Ger* District. Significant change that is either currently occurring or in planning includes the conversion of *ger* areas to apartment blocks, improving infrastructure in *ger* areas, as well as implementing the use of new technologies such as improved fuel sources and stoves. It is positive that with said change, air pollution levels have been on the decline.

I found that the largest percentage of people living in *ger* areas like where they live. If the 20% of survey participants that didn't answer this question had given an answer, results could have differed. Yet from Caldieron and Miller's 2013 study, I can infer that the majority of those who didn't answer would have said that they like living in the *Ger* District. Even though living conditions are substandard by modern world standards, you have to remember where many of these people came from. Many of them once lived in the middle of nowhere, far from civilization. They had to source their own food and had to find their water all while dealing with the elements. So of course living in the *Ger* District is a much improved existence for many of them. I also found that a majority of people living in urban areas would like to live in *ger* areas either currently or if conditions were to improve. In the initial stages of my research, I wouldn't have thought this to be the case as it was my belief that the large majority of Ulaanbaatar residents would rather live in apartments. Yet it makes a lot of sense as to why many people would prefer to live in the *Ger* District. As Clare Cooper's study explains, the better part of people idealize home as a detached house with a yard (Cooper, 1974). With this, it was intriguing to see that the majority of *Ger* District residents would

move into an apartment if they had the opportunity. It is apparent that although many *Ger* District residents like where they live, they recognize that quality of life could be better living in an apartment under current conditions.

## 7.2 Recommendations

When making change to Ulaanbaatar's *Ger* District, it is important to take many details into consideration. Of these details, the needs and wants of *Ger* District residents should take priority. Since it is their lives that are going to be modified in the future, they need to be taken at precedence. First is what the *Ger* District residents need. Since public health is largely affected by pollution, levels should be greatly reduced. Air pollution should take primary focus as it is the most severe. It is not acceptable for air pollution to reach levels 14 times greater than both International and Mongolian Standards (Galimbyek, 2015). These high levels of air pollution are putting safety at risk.

It is unfortunate for Ulaanbaatar that Mongolia's winters are so cold; otherwise air pollution wouldn't be as much of a problem. Since Mongolia's winters will likely still be freezing in years to come, change needs to be made to reduce this pollution. It is positive to see change being made including the use of new fuel sources as well as the improved Top Lit Updraft Stove. It is also good to see the winter daily average particulate matter 2.5 level dropped from 195.7  $\mu\text{g}/\text{m}^3$  in 2011 to 93.4  $\mu\text{g}/\text{m}^3$  in 2014 (Galimbyek, 2015). Even with such improvement, more needs to be done.

As the most recognized problem, air pollution should be addressed first. In my opinion, this involves finding alternate ways of heating *Ger* District homes. Even with improved stoves and coal types, air pollution levels will remain high with the amount of households that use coal and the frequency that it is used. Possible types of alternate heating includes electric and gas. Issues with electric heating are that it is two times the cost of coal and electricity is unreliable in Ulaanbaatar. The major issue with gas heating is that it costs four times as much as coal (Galimbyek, personal communication, May 13, 2015). Ways to minimize the cost of alternate heating methods should be found.

The wants of those living in the *Ger* District should also be considered. It isn't ethical to go against the majority of people's wishes if there are alternate solutions preferred by residents. This is why I wanted to conduct research on the opinions of *Ger* District residents regarding the *Ger* District. Moving forward, it is important that the wants of Ulaanbaatar residents, specifically *Ger* District residents, are taken into consideration when making changes. It is important that wants are paid attention to so that the highest possible number of residents are more than satisfied with their quality of life.

### **7.3 Suggestions for Future Research**

I believe that further research should be conducted by polling people living within the *Ger* District to see if they would rather move into apartments or stay where they are with improved infrastructure. From my results, it also is apparent that people living in urban areas should be polled to find whether they would rather live in apartments or in improved *ger* areas. Beyond polling, research can be conducted looking at what would be the most cost effective type of construction to do.

Hypothetically, let's say a majority of people living within urban areas say they would rather live in houses on the outskirts of urban areas that are fully connected to all of the city's utility systems than the apartments they currently live in. In this case, constructing these suburban type houses would make more sense than constructing more apartments. Upper-class apartment residents that wish to could move into the new houses creating vacancies in apartment units. In theory, these apartment units can be filled by middle class residents opening up apartments that are affordable for Ulaanbaatar's *Ger* District residents to purchase.

In the case that the majority of current *Ger* District residents would prefer to remain where they are if infrastructure is improved, and that improving infrastructure is cheaper than constructing new apartment buildings, then this is what should be done. Building new apartment buildings isn't logical if it would be cheaper and more popular to just add infrastructure to the *Ger* District. I don't know what is more cost effective, but from my research there is a lot of apparent positivity about living in *ger* areas with improved infrastructure. If you marry the privacy, space, and ability to

customize and personalize your home with modern infrastructure, all at once the *ger* district transforms into the place to be. Still, further and more detailed research should be conducted to find the best possible solutions.



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## 9. Appendices

### Appendix 1: Survey

Намайг Давид гэдэг. Монгол улсад SIT World Learning төлөөлөгчийн газраар дамжуулан суралцаж буй америк оюутан. Энэхүү судалгаа нь гэр хорооллын өнөөгийн байдалтай танилцах зорилготой юм. Хэрэв та энэ хөтөлбөрийн талаар илүү мэдээлэл авахыг хүсвэл дараах утсаар холбогдоно уу! 11-452138

Өөрийн цаг заваа зарцуулан судалгааг бөглөж байгаад тань талархаж байна.

### Судалгаа

- 1) Нас: .....
- 2) Хүйс(хариултаа дугуйлна уу):   a. Эр                      b. Эм
- 3) Амьдарч буй дүүрэг?
- 4) Эдгээрээс алинд нь амьдардаг вэ?
  - a. Орон сууцанд
  - b. Гэрт
  - c. Хашаа байшинд
  - d. Амины орон сууц
- 5) Таны мэргэжил юу вэ?
- 6) Таны бодлоор Улаанбаатар хотын агаарын бохирдолтой хэрхэн тэмцэх вэ?
- 7) Таны бодлоор Улаанбаатар хотын хүн амын өсөлтийг хэрхэн зохицуулах вэ?
- 8) Таны бодлоор гэр хороололд тулгамдаж буй асуудлууд юу вэ? Нэгээс дээш хариулт дугуйлах боломжтой.
  - a. Бохирдол(хөрс, агаар)
  - b. Гэмт хэрэг
  - c. Усны хангамж
  - d. Дэд бүтэц
  - e. Бусад(доор тайлбарлан бичнэ үү).....

**Гэр хороололд амьдардаг иргэдэд зориулсан асуултууд:**

- 9) Та гэр хороололд амьдрах дуртай юу? Доор тайлбарлан бичнэ үү?

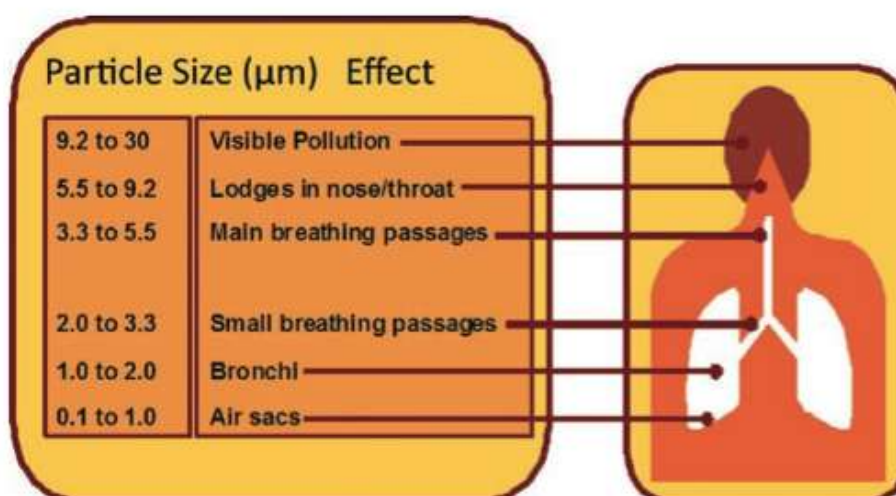
- 10) Хэрэв танд гэр орон сууцанд амьдрах боломж олдвол та нүүх үү?  
А. Тийм                      б. Үгүй

## **Appendix 2: List of Interviews**

This is the list of conducted interviews. Those listed as anonymous wished to remain anonymous. Note: not all interviews were used.

- 1) Boldbaatar Chuluunbaatar (Ph. D), personal communication, May 12, 2015. Director of Division of Forestry and the Landscape.
- 2) Anonymous, personal communication, May 12, 2015.
- 3) Galimbyek, personal communication, May 13, 2015.  
Air Quality Agency of UB City.
- 4) Enkhbold Enkhtaivan, personal communication, May 13, 2015.  
Contract Lawyer
- 5) Anonymous, personal communication, May 13, 2015.
- 6) Erdene Dorjsuren, personal communication, May 15, 2015.  
Senior Officer for Land Conservation and Soil degradation  
prevention, Land Resource Coordination Division, Ministry of  
Environment, Green Development and Tourism
- 7) Gendenbazar, personal communication, May 15, 2015.  
Shaman; resident of the *Ger* District.
- 8) D. Ganbold and P. Oyunbileg, personal communication, May 21,  
2015. Residents of the *Ger* District.
- 9) Battulga Genenbazar, personal communication, May 27, 2015.  
Resident of the *Ger* District.
- 10) Namsrai, personal communication, May 27, 2015.  
Resident of the *Ger* District.

### Appendix 3: Particulate Matter Size Chart.



Source: Guttikunda, draft 2007. Taken from the Air Pollution in Ulaanbaatar Initial Assessment of Current Situation and Effects of Abatement Measures. December 2009. (Air Pollution in Ulaanbaatar, 2009)